

REMARKS

Claims 1-14 are pending in the application. No claims are amended, thus claims 1-14 will remain pending.

As a preliminary matter, Applicants would like to thank Examiner Weiner for her acknowledgement that claims 8-14 would be allowable if rewritten in independent format.

Claim Rejections – 35 U.S.C. §102

Claims 1-7 have been rejected under 35 U.S.C. 102(b) as being anticipated by Wainwright *et al.* (hereinafter “Wainwright”). Specifically, the Examiner suggests that Wainwright “teaches a film comprising polybenzimidazole, dimethylacetamide and immersed in phosphoric acid.”

Applicants respectfully traverse this rejection based upon the following comments. Applicants respectfully submit that claim 1 as currently pending is directed to “[a] proton conductive solid polymer electrolyte comprising a basic solid polymer as a base material, said base material being impregnated with an acidic inorganic liquid, wherein: a material, which has at least one lone pair, is dispersed in said base material; and a mole number of said material per gram of said base material is less than 0.0014 mol.”

Wainwright does not teach each and every element of the present claims, at least because Wainwright does not teach or suggest a “basic solid polymer ... wherein a material, which has at least one lone pair, is *dispersed in said base material*...” as provided by independent claim 1. Moreover, Applicants disagree with the Examiner’s assertion that Wainwright (page 256) teaches a film comprising polybenzimidazole, dimethylacetamide and immersed in phosphoric acid.

Wainwright teaches the preparation of a *phosphoric acid-doped polybenzimidazole polymer* (see, e.g., page 257, first paragraph or page 259, last paragraph). Wainwright accomplishes the synthesis of this polymer by using dimethylacetamide:



as solvent, which is a commonly used solvent in polymerization reactions. Wainwright specifically points out that “[p]olybenzimidazole (Celanese) films were cast from a solution of the polymer in dimethylacetamide.” That is, Wainwright teaches a film obtained by casting a solution composed of a solute (*i.e.*, a polymer such as polybenzimidazole) dissolved in a solvent of dimethylacetamide. A person of skill in the art would understand that when a film obtained by casting a solution composed of a solute is dissolved in a solvent, the solvent is evaporated

after casting to obtain a film containing the solute. Therefore, in Wainwright, dimethylacetamide as the solvent is evaporated from the cast film, and thus the film includes only the polymer, i.e., polybenzimidazole.

In fact, the purpose of Wainwright is to present results from a number of studies investigating the properties of *acid doped polybenzimidazole* (see lines 19-21 of page 256). Accordingly, if dimethylacetamide were present, it would be a substantial impurity. This impurity would have had a noticeable effect on the properties of the acid doped polybenzimidazole. Therefore, Wainwright's resultant PBI film could not have contained dimethylacetamide.

Thus, dimethylacetamide *does not* become dispersed in the polybenzimidazole polymer of Wainwright, as required by the currently pending claims. Accordingly, Wainwright does not teach or suggest a film of the present invention.

In view of the foregoing, Applicants respectfully request withdrawal of the rejection of claims 1-7 under 35 U.S.C. 102(b) and reconsideration of the claims.

